

APPENDIX A

Upload time comparison chart

MPEG 1 Video	Data Capacity	MPEG 2 Video
60 min	0.50 GB	17 min
120 min	1.00 GB	34 min
180 min	1.50 GB	51 min
240 min	2.00 GB	69 min
420 min	3.50 GB	120 min

Upload Speed	Net Upload Speed (13% overhead and 1-byte=8 bits)	Upload Time for 1GB	Upload Time for 2GB	Upload Time for 2GB
		(2 hours MPEG 1 or 34 min MPEG 2)	(4 hours MPEG 1 or 69 min MPEG 2)	(7 hours MPEG 1 or 2 hours MPEG 2)
125 kbps	13.83 kBytes/s	20.09 hours	40.18 hours	60.27 hours
250 kbps	27.65 kBytes/s	10.04 hours	20.09 hours	30.13 hours
512 kbps	56.64 kBytes/s	4.90 hours	9.81 hours	14.71 hours
1,000 kbps	110.62 kBytes/s	2.51 hours	5.02 hours	7.53 hours
2,000 kbps	221.24 kBytes/s	1.26 hours	2.51 hours	3.77 hours

Download/Upload Comparison Chart

One GB file download/upload comparison for various services and transfer rates. Rates are based on current service offerings by providers (e.g., Qwest) as well as information from dsreports.com.

Type Description	Downstream (bps)	Upstream (bps)	Actual Downstream (Bps)	Actual Upstream (Bps)	1 GB File Down-stream Transfer (M)	1 GB File Upstream Transfer (M)
ADSL Mid-range, consumer	256,000	90,000	27,840	9,788	10.7	30.5
ADSL Mid-range, consumer	256,000	128,000	27,840	13,920	10.7	21.4
ISDN Typical, consumer	128,000	128,000	18,000	16,000	18.6	18.6
ADSL High-end, consumer	640,000	256,000	68,800	27,840	4.3	10.7
Low-end, small business	640,000	272,000	69,800	29,580	4.3	10.1
ADSL business	640,000	644,000	69,800	59,160	4.8	5.0
Mid-range, small business	640,000	816,000	104,400	88,740	2.6	3.4
ADSL Enterprise	1,200,000	1,100,000	130,500	118,625	2.3	2.5
ADSL Enterprise	4,400,000	1,100,000	478,500	118,625	0.6	2.5
ADSL Enterprise	7,100,000	1,100,000	772,125	118,625	0.4	2.5
ADSL Max-speed	8,000,000	3,000,000	870,000	328,250	0.3	0.9
FTTH Case-study (Palo Alto)	7,100,000	4,400,000	887,600	680,000	0.3	0.6
CATV Max-speed	10,000,000	10,000,000	1,250,000	1,250,000	0.2	0.2

FIG. 1

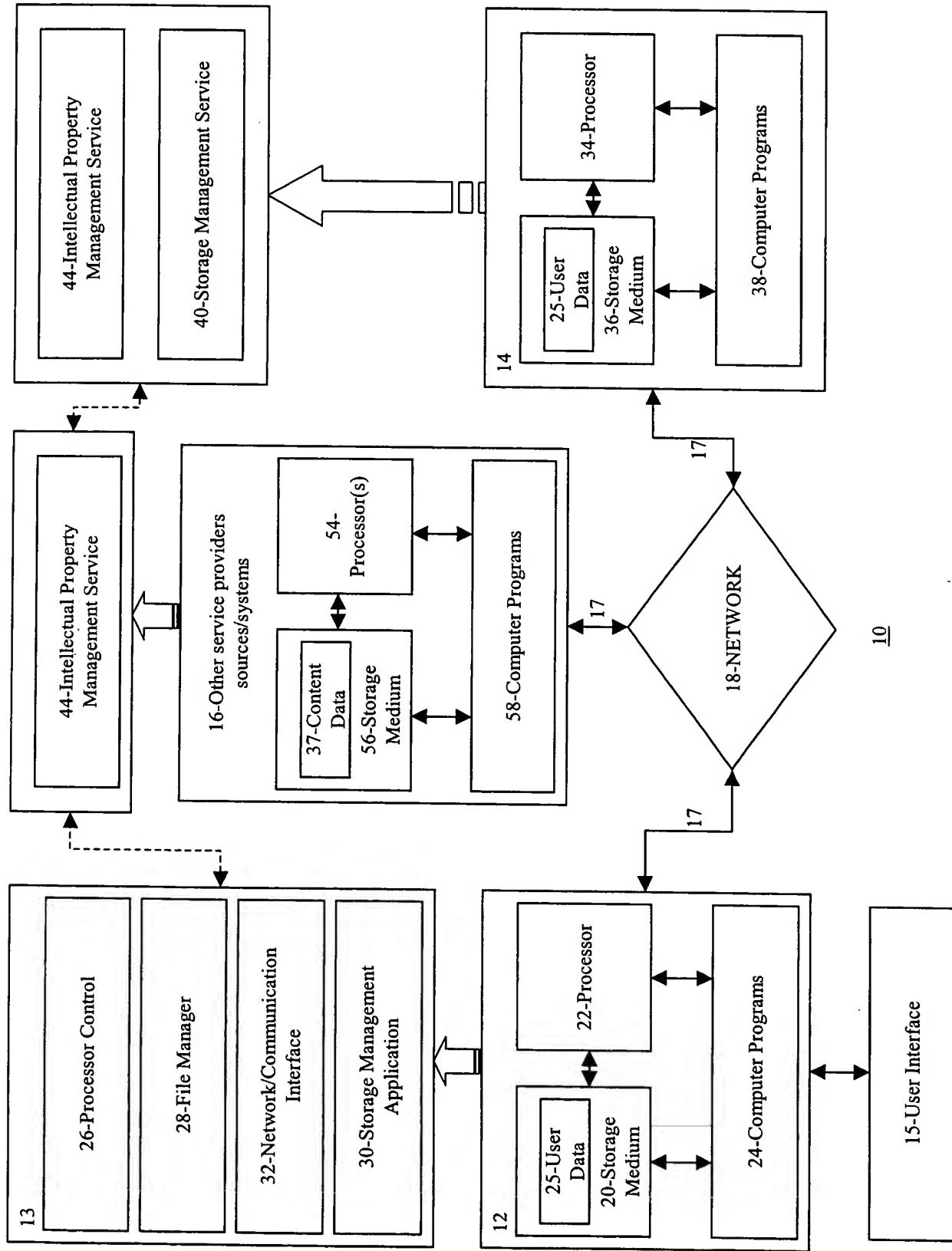


FIG. 2

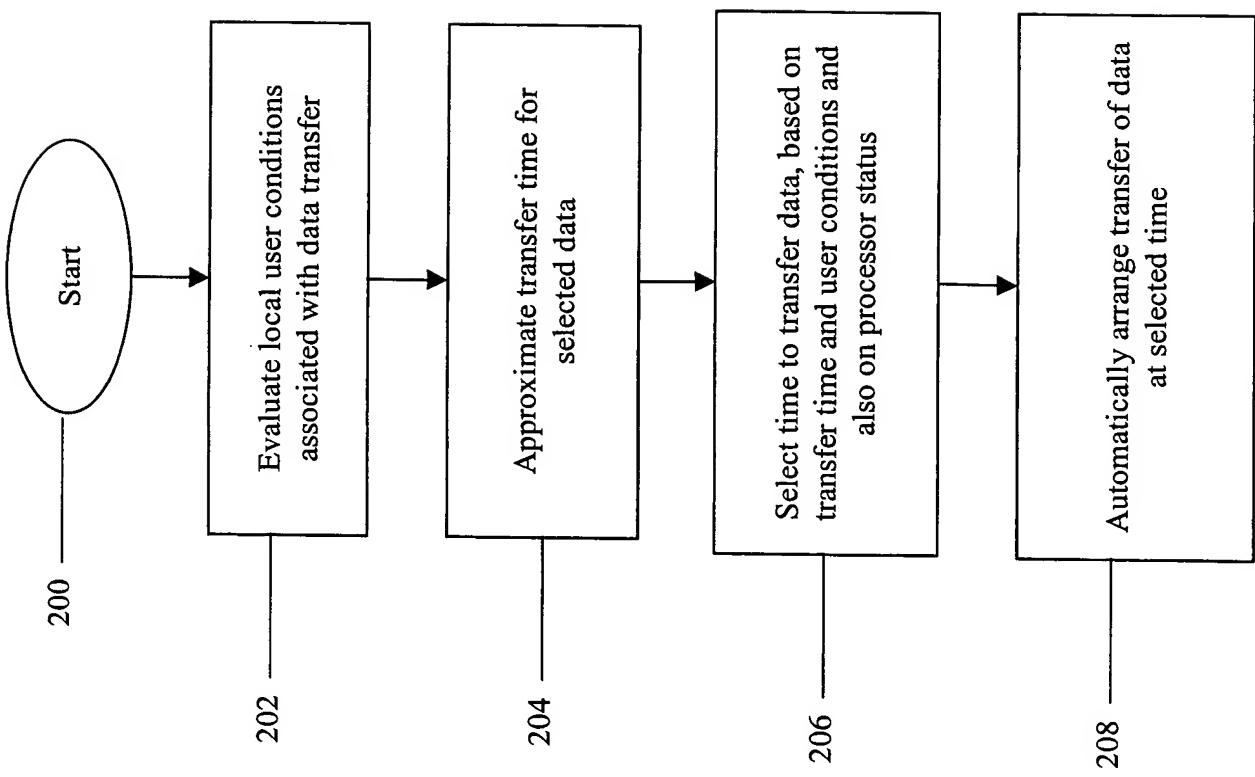


FIG. 3

